Ms. Lisa Sult
Rink Printing Company
814 South Main Street
South Bend, IN 46601

Re: Registered Construction and Operation Status,
141-15140-00546

Dear Ms. Sult:

The application from Rink Printing Company, received on December 11, 2001, has been reviewed. Based on the data submitted and the provisions in 326 IAC 2-5.1, it has been determined that the following emission units, to be located at 814 South Main Street, South Bend, Indiana 46601, are classified as registered:

(a) One (1) pre-press or platemaking unit, identified as PP.

(b) Six (6) Lithographic printing presses:

(1) Press # H40, with a maximum line speed of 310 ft/min, and a maximum printing width of 40 inches;
(2) Press # K40, with a maximum line speed of 585 ft/min, and a maximum printing width of 40 inches;
(3) Press # L28, with a maximum line speed of 340 ft/min, and a maximum printing width of 28 inches;
(4) Press # S28, with a maximum line speed of 340 ft/min, and a maximum printing width of 28 inches;
(5) Press # ABD, with a maximum line speed of 170 ft/min, and a maximum printing width of 13 inches; and
(6) Press # 217C, with a maximum line speed of 140 ft/min, and a maximum printing width of 11 inches.

(c) One (1) letterpress/diecutter unit.

(d) Two (2) natural gas fired boilers, identified as Boilers B1 and B2, each with a maximum heat input rate of 100,000 BTU/hr.

(e) Three (3) natural gas fired space heating units, identified as F1, F2, and F3, each with a maximum heat input rate of 240,000 BTU/hr.

The following conditions shall be applicable:

1. Pursuant to 326 IAC 5-1-2 (Opacity Limitations) except as provided in 326 IAC 5-1-3 (Temporary Exemptions), opacity shall meet the following:

(a) Opacity shall not exceed an average of thirty percent (30%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.

(b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of 15 minutes (60 readings) in a 6-hour period as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor in a six (6) hour period.

2. Pursuant to 326 IAC 6-3-2 (Process Operations) the particulate matter (PM) from the printing operation shall be limited by the following:

Interpolation and extrapolation of the data for the process weight rate up to sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$$E = 4.10\ P^{0.67}$$

where E = rate of emission in pounds per hour and
P = process weight rate in tons per hour

3. Pursuant to 326 IAC 6-2-4 (Particulate Emission Limitations for Sources of Indirect Heating : Emission Limitations for Facilities Specified in 326 IAC 6-2-1(d)), the PM emissions from each of the two (2) boilers shall be limited to 0.6 lb/mmBTU heat input.

4. Any change which may increase the potential emissions of VOC to twenty five (25) tons per year from this source shall require approval from IDEM, OAQ, prior to making the change.

5. Any change or modification which may increase the potential to emit of a combination of HAPs to twenty-five (25) tons per year or a single HAP to ten (10) tons per year from this source shall require approval from IDEM, OAQ, prior to making the change.

This registration is the first air approval issued to this source. The source may operate according to 326 IAC 2-5.5.

An authorized individual shall provide an annual notice to the Office of Air Quality that the source is in operation and in compliance with this registration pursuant to 326 IAC 2-5.1-2(f)(3). The annual notice shall be submitted to:

Compliance Data Section
Office of Air Quality
100 North Senate Avenue
P.O. Box 6015
Indianapolis, IN 46206-6015

no later than March 1 of each year, with the annual notice being submitted in the format attached.

An application or notification shall be submitted in accordance with 326 IAC 2 to the Office of Air Quality (OAQ) if the source proposes to construct new emission units, modify existing emission units, or otherwise modify the source.

Sincerely,

Paul Dubenetzky, Chief
Permits Branch
Office of Air Quality

mm
cc: File - St. Joseph County
St. Joseph County Health Department

Air Compliance - Rick Reynolds
Northern Regional Office
Permit Tracking - Janet Mobley
Technical Support and Modeling - Michele Boner
Compliance Data Section - Karen Nowak

Registration

This form should be used to comply with the notification requirements under 326 IAC 2-5.1-2(f)(3)

Company Name: Rink Printing Company
Address: 814 South Main Street
City: South Bend, IN 46601
Authorized individual:
Phone #:
Registration #: 141-15140-00546

I hereby certify that **Rink Printing Company** is still in operation and is in compliance with the requirements of Registration **141-15140-00546**.

Name (typed):
Title:
Signature:
Date:

Indiana Department of Environmental Management
Office of Air Quality

Technical Support Document (TSD) for a Registration

Source Background and Description

Source Name:	**Rink Printing Company**
Source Location:	**814 South Main Street, South Bend, IN 46601**
County:	**St. Joseph**
SIC Code:	**2752**
Operation Permit No.:	**141-15140-00546**
Permit Reviewer:	**Madhurima D. Moulik**

The Office of Air Quality (OAQ) has reviewed an application from Rink Printing Company relating to the construction and operation of several printing presses.

Unpermitted Emission Units and Pollution Control Equipment

The source consists of the following unpermitted emission units:

(a) One (1) pre-press or platemaking unit, identified as PP.

(b) Six (6) Lithographic printing presses:

(1) Press # H40, with a maximum line speed of 310 ft/min, and a maximum printing width of 40 inches;
(2) Press # K40, with a maximum line speed of 585 ft/min, and a maximum printing width of 40 inches;
(3) Press # L28, with a maximum line speed of 340 ft/min, and a maximum printing width of 28 inches;
(4) Press # S28, with a maximum line speed of 340 ft/min, and a maximum printing width of 28 inches;
(5) Press # ABD, with a maximum line speed of 170 ft/min, and a maximum printing width of 13 inches; and
(6) Press # 217C, with a maximum line speed of 140 ft/min, and a maximum printing width of 11 inches.

(c) One (1) letterpress/diecutter unit.

(d) Two (2) natural gas fired boilers, identified as Boilers B1 and B2, each with a maximum heat input rate of 100,000 BTU/hr.

(e) Three (3) natural gas fired space heating units, identified as F1, F2, and F3, each with a maximum heat input rate of 240,000 BTU/hr.

Enforcement Issue

(a) IDEM is aware that equipment has been constructed and operated prior to receipt of the proper permit. The subject equipment is listed in this Technical Support Document under the condition entitled *Unpermitted Emission Units and Pollution Control Equipment.*

(b) IDEM is reviewing this matter and will take appropriate action. This proposed permit is intended to satisfy the requirements of the construction permit rules.

Recommendation

The staff recommends to the Commissioner that the construction and operation be approved. This recommendation is based on the following facts and conditions:

Unless otherwise stated, information used in this review was derived from the application and additional information submitted by the applicant.

An application for the purposes of this review was received on December 11, 2001. Additional information was received on January 23, 2002.

Emission Calculations

See Appendix A of this document for detailed emissions calculations.

Potential To Emit

Pursuant to 326 IAC 2-1.1-1(16), Potential to Emit is defined as "the maximum capacity of a stationary source or emissions unit to emit any air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of a source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or type or amount of material combusted, stored, or processed shall be treated as part of its design if the limitation is enforceable by the U. S. EPA, the department, or the appropriate local air pollution control agency."

Pollutant	Potential To Emit (tons/year)
PM	Negligible
PM-10	Negligible
SO_2	Negligible
VOC	22.1
CO	0.3
NO_x	0.4

(a) The potential to emit (as defined in 326 IAC 2-7-1(29)) of VOCs is greater than 10 tons per year and less than 25 tons per year. Therefore, pursuant to 326 IAC 2-5.1-2(a)(1)(C), a registration will be granted.

County Attainment Status

The source is located in St. Joseph County.

Pollutant	Status
PM-10	attainment
SO_2	attainment
NO_2	attainment
Ozone	attainment
CO	attainment
Lead	attainment

(a) Volatile organic compounds (VOC) are precursors for the formation of ozone. Therefore, VOC emissions are considered when evaluating the rule applicability relating to the ozone standards. St. Joseph County has been designated as attainment or unclassifiable for ozone. Therefore, VOC emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 and 40 CFR 52.21.

(b) St. Joseph County has been classified as attainment or unclassifiable for all other criteria pollutants. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 and 40 CFR 52.21.

Source Status

New Source PSD Definition (emissions after controls, based on 8,760 hours of operation per year at rated capacity and/ or as otherwise limited):

Pollutant	Emissions (ton/yr)
PM	Negligible
PM10	Negligible
SO_2	Negligible
VOC	22.1
CO	0.3
NO_x	0.4
Single HAP	Negligible
Combination HAPs	Negligible

(a) This new source is **not** a major stationary source because no attainment pollutant is emitted at a rate of 250 tons per year or greater and it is not in one of the 28 listed source categories. Therefore, pursuant to 326 IAC 2-2, and 40 CFR 52.21, the PSD requirements do not apply.

Part 70 Permit Determination

326 IAC 2-7 (Part 70 Permit Program)

This new source is not subject to the Part 70 Permit requirements because the potential to emit (PTE) of:
(a) each criteria pollutant is less than 100 tons per year,
(b) a single hazardous air pollutant (HAP) is less than 10 tons per year, and
(c) any combination of HAPs is less than 25 tons/year.

This is the first air approval issued to this source.

Federal Rule Applicability

(a) New Source Performance Standards (NSPS): 40 CFR 60.430, Subpart QQ - Standards of Performance for the Graphic Arts Industry:

This standard applies to each publication rotogravure printing press, that commences construction, modification, or reconstruction after October 28, 1980.
The six (6) Lithographic Sheet-Fed presses are not subject to this NSPS, because they are not rotogravure printing presses.

(b) New Source Performance Standards (NSPS): 40 CFR 60.40c, Subpart Dc - Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units:

The two (2) boilers each have maximum heat input capacities of less than 10 mmBTU per hour. Therefore the boilers are not subject to this NSPS.

(c) National Emission Standards for Hazardous Air Pollutants (NESHAPs):

40 CFR 63.820, Subpart KK - National Emission Standard for the Printing and Publishing Industry: This standard applies to major source of hazardous air pollutants (HAPs), at which publication rotogravure, product and packaging rotogravure, or wide-web flexographic printing presses are operated.

The six (6) Lithographic Sheet-Fed presses are not subject to this NESHAP, because they are not publication, product and packaging rotogravure printing presses, nor are they wide-web flexographic printing presses, and they are not major for single HAP and combined HAPs.

State Rule Applicability - Entire Source

326 IAC 2-6 (Emission Reporting)

This source is located in St. Joseph County and the potential to emit of pollutants is less than one hundred (100) tons per year. Therefore, 326 IAC 2-6 does not apply.

326 IAC 5-1 (Visible Emissions Limitations)

Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary Exemptions), opacity shall meet the following, unless otherwise stated in this permit:

(a) Opacity shall not exceed an average of thirty percent (30%) any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.

(b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings) as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.

State Rule Applicability - Individual Facilities

326 IAC 6-3-2 (Process Operations)

The particulate matter (PM) from the printing facility shall be limited by the following:

Interpolation and extrapolation of the data for the process weight rate up to sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$$E = 4.10\ P^{0.67}$$

where E = rate of emission in pounds per hour and
P = process weight rate in tons per hour

326 IAC 8-5-5 (Miscellaneous Operations: Graphic Arts Operations)

This rule applies to packaging rotogravure; publication rotogravure; and flexographic printing

sources. The six (6) Lithographic Sheet-Fed presses are not subject to this rule, because they are not publication, product and packaging rotogravure printing presses, nor are they flexographic printing presses.

326 IAC 8-1-6 (General Reduction Requirements)

326 IAC 8-1-6 applies to new facilities as of January 1, 1980, that have potential VOC emissions of 25 tons per year or greater if no specific rule in article 8 is applicable. This source is not subject to 326 IAC 8-1-6 because the source VOC potential emission is less than 25 tons per year.

326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP))

The operation of the printing presses will emit less than 10 tons per year of a single HAP or 25 tons per year of a combination of HAPs. Therefore, 326 IAC 2-4.1 does not apply.

326 IAC 6-3-2 (Process Operations)

The source is in compliance with this PM emission limit since the potential to emit of PM of the printing presses is negligible.

326 IAC 6-2-4 (Particulate Emission Limitations for Sources of Indirect Heating : Emission Limitations for Facilities Specified in 326 IAC 6-2-1(d))

Pursuant to 326 IAC 6-2-4, the particulate emissions from the two (2) boilers, constructed after September 21, 1983, shall be limited by the following equation:

$$Pt = \frac{1.09}{Q^{0.26}}$$

Where:

Pt = Pounds of particulate matter emitted per million BTU heat input.

Q = Total source maximum operating capacity rating in mmBTU per hour.

Both Boiler 1 and Boiler 2 were constructed in April 2000.

Therefore, for Boiler 1, Pt = 1.09/ (.1)^0.26 = 1.98 lb/mmBTU
For Boiler 2, Pt = 1.09/(0.2)^0.26 = 1.66 lb/mmBTU

According to 326 IAC 6-2, for Q less than 10 mmBTU/hr, Pt shall not exceed 0.6 lb/mmBTU. Therefore, the PM emissions from each of the two (2) boilers shall be limited to 0.6 lb/mmBTU heat input.

The potential to emit of PM of the two (2) boilers is negligible. Therefore, the boilers are in compliance with this rule.

Conclusion

The construction and operation of this printing facility shall be subject to the conditions of the attached proposed Registration No: 141-15140-00546.

Appendix A: Emissions Calculations

VOC- H40

Company Name: Rink Printing Company

Address City IN Zip: 814 South Main Street, South Bend, IN 46601

CP: 141-15140

Plt ID: 141-00546

Reviewer: Madhurima D. Moulik

Date: January 2, 2002

THROUGHPUT

Press I.D.	MAXIMUM LINE SPEED (FEET/MIN)	MAXIMUM PRINT WIDTH (INCHES)	MMin^2/YEAR
H40	310	40	78209

INK VOCS

Ink Name	Maxium Coverage '(lbs/MMin^2)	Weight % Volatiles*	Flash Off %	Throughput (MMin^2/Year)	Emissions (TONS/YEAR)
Ink - Braden Sutphin	0.09	20%	5.00%	78209	0.04
Press Wash-295 TWA1	0.09	100%	100.00%	78209	3.52
Press Wash - MRC	0.09	100%	100.00%	78209	3.52
Isopropyl Alcohol	0.07	100%	100.00%	78209	2.74
Fountain Solution	0.02	20%	100.00%	78209	0.16
Fountain Solution	0.02	65%	100.00%	78209	0.51

Total VOC Emissions =	**6.80 Ton/yr**

*VOC (Tons/Year) = Maximum Coverage pounds per MMin^2 * Weight % volatiles (weight % of water & organics - weight % of water = weight % organics) * Flash off * Throughput * 1 Ton per 2000 pounds

METHODOLOGY

Throughput = Maxium line speed feet per minute * Convert feet to inches * Maximum print width inches * 60 minutes per hour * 8760 hours per year = MMin^2 per Year

VOC = Maximum Coverage pounds per MMin^2 * Weight percentage volatiles (water minus organics) * Flash off * Throughput * Tons per 2000 pounds = Tons per Year

NOTE: NON- HEAT SET OFFSET PRINTING HAS AN ASSUMED FLASH OFF OF 5% [EPA-Memo]

Appendix A: Emissions Calculations

VOC - Press K40

Company Name: Rink Printing Company

Address City IN Zip: 814 South Main Street, South Bend, IN 46601

CP: 141-15140

Plt ID: 141-00546

Reviewer: Madhurima D. Moulik

Date: January 2, 2002

THROUGHPUT

Press I.D.	MAXIMUM LINE SPEED (FEET/MIN)	MAXIMUM PRINT WIDTH (INCHES)	MMin^2/YEAR
K40	585	40	147588

INK VOCS

Ink Name	Maxium Coverage '(lbs/MMin^2)	Weight % Volatiles*	Flash Off %	Throughput (MMin^2/Year)	Emissions (TONS/YEAR)
Ink-Braden Sutphin	0.09	20%	5.00%	147588	0.07
Press Wash - 295 TW A1	0.09	100%	100.00%	147588	6.64
Press Wash - MRC	0.09	100%	100.00%	147588	6.64
Fountain Solution-Unitrol	0.02	20%	100.00%	147588	0.30
Fountain Solution-Aquanol	0.02	65%	100.00%	147588	0.96

Total VOC Emissions =	**7.67 Ton/yr**

*VOC (Tons/Year) = Maximum Coverage pounds per MMin^2 * Weight % volatiles (weight % of water & organics - weight % of water = weight % organics) * Flash off * Throughput * 1 Ton per 2000 pounds

METHODOLOGY

Throughput = Maxium line speed feet per minute * Convert feet to inches * Maximum print width inches * 60 minutes per hour * 8760 hours per year = MMin^2 per Year

VOC = Maximum Coverage pounds per MMin^2 * Weight percentage volatiles (water minus organics) * Flash off * Throughput * Tons per 2000 pounds = Tons per Year

NOTE: NON - HEAT SET OFFSET PRINTING HAS AN ASSUMED FLASH OFF OF 5% [EPA-Memo]

Appendix A: Emissions Calculations

VOC - L28

Company Name: Rink Printing Company

Address City IN Zip: 814 South Main Street, South Bend, IN 46601

CP: 141-15140

Plt ID: 141-00546

Reviewer: Madhurima D. Moulik

Date: January 2, 2002

THROUGHPUT

Press I.D.	MAXIMUM LINE SPEED (FEET/MIN)	MAXIMUM PRINT WIDTH (INCHES)	MMin^2/YEAR
L28	340	28	60045

INK VOCS

Ink Name	Maxium Coverage '(lbs/MMin^2)	Weight % Volatiles*	Flash Off %	Throughput (MMin^2/Year)	Emissions (TONS/YEAR)
Ink - Braden Sutphin	0.09	20%	5.00%	60045	0.03
Press Wash-295 TWA1	0.09	100%	100.00%	60045	2.70
Press Wash - MRC	0.09	100%	100.00%	60045	2.70
Fountain Solution	0.02	20%	100.00%	60045	0.12
Fountain Solution	0.02	65%	100.00%	60045	0.39

Total VOC Emissions =	**3.12 Ton/yr**

*VOC (Tons/Year) = Maximum Coverage pounds per MMin^2 * Weight % volatiles (weight % of water & organics - weight % of water = weight % organics) * Flash off * Throughput * 1 Ton per 2000 pounds

METHODOLOGY

Throughput = Maxium line speed feet per minute * Convert feet to inches * Maximum print width inches * 60 minutes per hour * 8760 hours per year = MMin^2 per Year

VOC = Maximum Coverage pounds per MMin^2 * Weight percentage volatiles (water minus organics) * Flash off * Throughput * Tons per 2000 pounds = Tons per Year

NOTE: NON- HEAT SET OFFSET PRINTING HAS AN ASSUMED FLASH OFF OF 5% [EPA-Memo]

printing.wb3

updated 11/98

Appendix A: Emissions Calculations

VOC - S28

Company Name: Rink Printing Company

Address City IN Zip: 814 South Main Street, South Bend, IN 46601

CP: 141-15140

Plt ID: 141-00546

Reviewer: Madhurima D. Moulik

Date: January 2, 2002

THROUGHPUT

Press I.D.	MAXIMUM LINE SPEED (FEET/MIN)	MAXIMUM PRINT WIDTH (INCHES)	MMin^2/YEAR
S28	340	28	60045

INK VOCS

Ink Name	Maxium Coverage '(lbs/MMin^2)	Weight % Volatiles*	Flash Off %	Throughput (MMin^2/Year)	Emissions (TONS/YEAR)
Ink - Braden Sutphin	0.09	20%	5.00%	60045	0.03
Press Wash-295 TWA1	0.09	100%	100.00%	60045	2.70
Press Wash - MRC	0.09	100%	100.00%	60045	2.70
Fountain Solution	0.02	20%	100.00%	60045	0.12
Fountain Solution	0.02	65%	100.00%	60045	0.39

Total VOC Emissions =	**3.12 Ton/yr**

*VOC (Tons/Year) = Maximum Coverage pounds per MMin^2 * Weight % volatiles (weight % of water & organics - weight % of water = weight % organics) * Flash off * Throughput * 1 Ton per 2000 pounds

METHODOLOGY

Throughput = Maxium line speed feet per minute * Convert feet to inches * Maximum print width inches * 60 minutes per hour * 8760 hours per year = MMin^2 per Year

VOC = Maximum Coverage pounds per MMin^2 * Weight percentage volatiles (water minus organics) * Flash off * Throughput * Tons per 2000 pounds = Tons per Year

NOTE: NON- HEAT SET OFFSET PRINTING HAS AN ASSUMED FLASH OFF OF 5% [EPA-Memo]

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Appendix A: Emissions Calculations

VOC - ABD

Company Name: Rink Printing Company

Address City IN Zip: 814 South Main Street, South Bend, IN 46601

CP: 141-15140

Plt ID: 141-00546

Reviewer: Madhurima D. Moulik

Date: January 2, 2002

THROUGHPUT

Press I.D.	MAXIMUM LINE SPEED (FEET/MIN)	MAXIMUM PRINT WIDTH (INCHES)	MMin^2/YEAR
ABD	170	13	13939

INK VOCS

Ink Name	Maxium Coverage '(lbs/MMin^2)	Weight % Volatiles*	Flash Off %	Throughput (MMin^2/Year)	Emissions (TONS/YEAR)
Ink - Braden Sutphin	0.09	20%	5.00%	13939	0.01
Press Wash-295 TWA1	0.09	100%	100.00%	13939	0.63
Press Wash - MRC	0.09	100%	100.00%	13939	0.63
Fountain Solution	0.02	20%	100.00%	13939	0.03
Fountain Solution	0.02	65%	100.00%	13939	0.09

Total VOC Emissions =	**0.72 Ton/yr**

*VOC (Tons/Year) = Maximum Coverage pounds per MMin^2 * Weight % volatiles (weight % of water & organics - weight % of water = weight % organics) * Flash off * Throughput * 1 Ton per 2000 pounds

METHODOLOGY

Throughput = Maxium line speed feet per minute * Convert feet to inches * Maximum print width inches * 60 minutes per hour * 8760 hours per year = MMin^2 per Year

VOC = Maximum Coverage pounds per MMin^2 * Weight percentage volatiles (water minus organics) * Flash off * Throughput * Tons per 2000 pounds = Tons per Year

NOTE: NON- HEAT SET OFFSET PRINTING HAS AN ASSUMED FLASH OFF OF 5% [EPA-Memo]

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Appendix A: Emissions Calculations

VOC - 217C

Company Name: Rink Printing Company

Address City IN Zip: 814 South Main Street, South Bend, IN 46601

CP: 141-15140

Plt ID: 141-00546

Reviewer: Madhurima D. Moulik

Date: January 2, 2002

THROUGHPUT

Press I.D.	MAXIMUM LINE SPEED (FEET/MIN)	MAXIMUM PRINT WIDTH (INCHES)	MMin^2/YEAR
217C	140	11	9713

INK VOCS

Ink Name	Maxium Coverage '(lbs/MMin^2)	Weight % Volatiles*	Flash Off %	Throughput (MMin^2/Year)	Emissions (TONS/YEAR)
Ink - Braden Sutphin	0.09	20%	5.00%	9713	0.00
Press Wash-295 TWA1	0.09	100%	100.00%	9713	0.44
Press Wash - MRC	0.09	100%	100.00%	9713	0.44
Fountain Solution	0.02	20%	100.00%	9713	0.02
Fountain Solution	0.02	65%	100.00%	9713	0.06

Total VOC Emissions =	**0.50 Ton/yr**

*VOC (Tons/Year) = Maximum Coverage pounds per MMin^2 * Weight % volatiles (weight % of water & organics - weight % of water = weight % organics) * Flash off * Throughput * 1 Ton per 2000 pounds

METHODOLOGY

Throughput = Maxium line speed feet per minute * Convert feet to inches * Maximum print width inches * 60 minutes per hour * 8760 hours per year = MMin^2 per Year

VOC = Maximum Coverage pounds per MMin^2 * Weight percentage volatiles (water minus organics) * Flash off * Throughput * Tons per 2000 pounds = Tons per Year

NOTE: NON- HEAT SET OFFSET PRINTING HAS AN ASSUMED FLASH OFF OF 5% [EPA-Memo]

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updated 11/98

Appendix A: Emissions Calculations

VOC - Letterpress

Company Name: Rink Printing Company

Address City IN Zip: 814 South Main Street, South Bend, IN 46601

CP: 141-15140

Plt ID: 141-00546

Reviewer: Madhurima D. Moulik

Date: January 2, 2002

THROUGHPUT

Press I.D.	MAXIMUM LINE SPEED (FEET/MIN)	MAXIMUM PRINT WIDTH (INCHES)	MMin^2/YEAR
Letterpress-HW	40	10	2523

INK VOCS

Ink Name	Maxium Coverage '(lbs/MMin^2)	Weight % Volatiles*	Flash Off %	Throughput (MMin^2/Year)	Emissions (TONS/YEAR)
Ink - Braden Sutphin	0.09	20%	5.00%	2523	0.00
Press Wash-295 TWA1	0.09	100%	100.00%	2523	0.11
Press Wash - MRC	0.09	100%	100.00%	2523	0.11
Fountain Solution	0.02	20%	100.00%	2523	0.01
Fountain Solution	0.02	65%	100.00%	2523	0.02

Total VOC Emissions =	**0.13 Ton/yr**

*VOC (Tons/Year) = Maximum Coverage pounds per MMin^2 * Weight % volatiles (weight % of water & organics - weight % of water = weight % organics) * Flash off * Throughput * 1 Ton per 2000 pounds

METHODOLOGY

Throughput = Maxium line speed feet per minute * Convert feet to inches * Maximum print width inches * 60 minutes per hour * 8760 hours per year = MMin^2 per Year

VOC = Maximum Coverage pounds per MMin^2 * Weight percentage volatiles (water minus organics) * Flash off * Throughput * Tons per 2000 pounds = Tons per Year

NOTE: NON- HEAT SET OFFSET PRINTING HAS AN ASSUMED FLASH OFF OF 5% [EPA-Memo]

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Appendix A: Emissions Calculations
Natural Gas Combustion Only
MM BTU/HR <100
Small Industrial Boiler + Space Heaters
Company Name: Rink Printing Company
Address City IN Zip: 814 South Main Street, South Bend, IN 46601
CP: 141-15140
Plt ID: 141-00546
Reviewer: Madhurima D. Moulik
Date: 25th January, 2002

Heat Input Capacity MMBtu/hr	Potential Throughput MMCF/yr
0.9	8.1

Pollutant

	PM*	PM10*	SO2	NOx	VOC	CO
Emission Factor in lb/MMCF	7.6	7.6	0.6	100.0 **see below	5.5	84.0
Potential Emission in tons/yr	0.0	0.0	0.0	0.4	0.0	0.3

*PM emission factor is filterable PM only. PM10 emission factor is condensable and filterable PM10 combined.

**Emission Factors for NOx: Uncontrolled = 100, Low NOx Burner = 50, Low NOx Burners/Flue gas recirculation = 32

Methodology

All emission factors are based on normal firing.
MMBtu = 1,000,000 Btu
MMCF = 1,000,000 Cubic Feet of Gas

Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,000 MMBtu
Emission Factors are from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, 1.4-3, SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03 (SUPPLEMENT D 3/98)
Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton
Note: Check the applicable rules and test methods for PM and PM10 when using the above emission factors to confirm that the correct factor is used (i.e., condensable included/not included).

See page 2 for HAPs emissions calculations.

Appendix A: Emissions Calculations
Natural Gas Combustion Only
MM BTU/HR <100
Small Industrial Boiler + Space Heaters
Company Name: Rink Printing Company
Address City IN Zip: 814 South Main Street, South Bend, IN 46601
CP: 141-15140
Plt ID: 141-00546
Reviewer: Madhurima D. Moulik
Date: 25th January, 2002

HAPS Emissions

HAPs - Organics

	Benzene	Dichlorobenzene	Formaldehyde	Hexane	Toluene
Emission Factor in lb/MMcf	2.1E-03	1.2E-03	7.5E-02	1.8E+00	3.4E-03
Potential Emission in tons/yr	8.462E-06	4.836E-06	3.022E-04	7.253E-03	1.370E-05

HAPs - Metals

	Lead	Cadmium	Chromium	Manganese	Nickel
Emission Factor in lb/MMcf	5.0E-04	1.1E-03	1.4E-03	3.8E-04	2.1E-03
Potential Emission in tons/yr	2.015E-06	4.433E-06	5.641E-06	1.531E-06	8.462E-06

Methodology is the same as page 1.

The five highest organic and metal HAPs emission factors are provided above.
Additional HAPs emission factors are available in AP-42, Chapter 1.4.